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The Water Utility Enterprise

Final — June 1989

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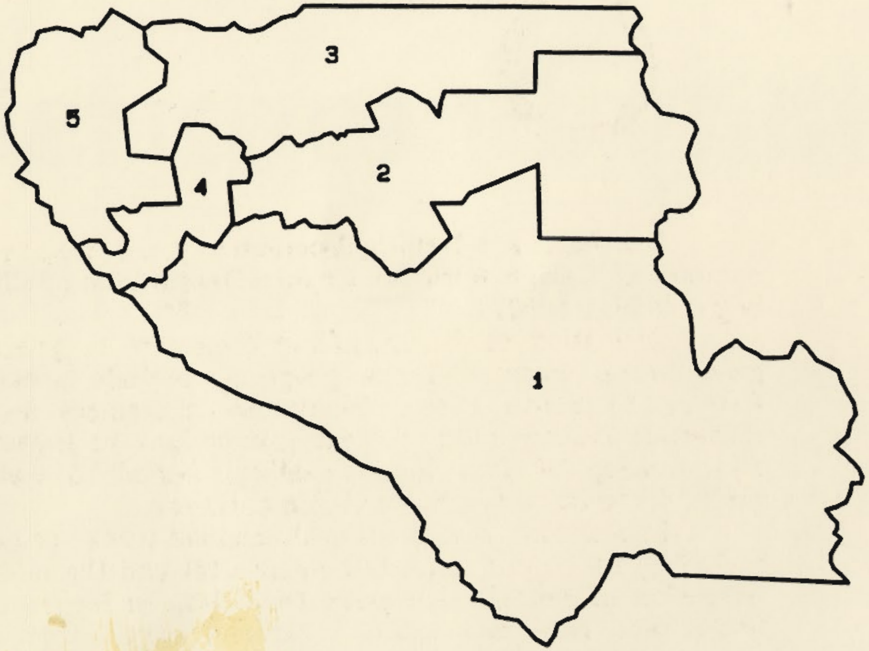
Santa Clara Valley Water District

PROPERTY OF SANTA CLARA VALLEY
WATER DISTRICT
5750 Almaden Expressway
San Jose, California 95118



DIRECTORIAL DISTRICTS

PREPARED BY
Michael Tsang, PE
Edward M. Drury
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UNDER DIRECTION OF
Jennie Micko, PE
Division Engineer
Water Supply Planning

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John T. O'Halloran
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District Board of Directors

Joe Pandit	District 1
Patrick T. Ferraro	District 2
Robert Gross	District 3
Joe Donohue	District 4
James J. Lenihan	District 5
Sig Sanchez, Vice Chairman	At Large
Joe Judge, Chairman	At Large

TD225 S383 W4 1989 c.2

Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118
TELEPHONE (408) 265-2600

Board of Directors:

The current year 1988-89, is the third consecutive dry year for Santa Clara County. Rainfall is about 58% of normal and local water storage in District reservoirs is only 11% of capacity.

In April 1988, because some wells in the Santa Clara groundwater basin were as low as in the 1976-77 drought, the District called for a 15% voluntary conservation from 1987 water use; however, the actual reduction was about 4% for 1988 calendar year. As the drought continued into 1989, the District's Board approved, on March 21, 1989, a 25% mandatory conservation from 1987's water use.

After vigorous negotiations with the Bureau of Reclamation, the District is receiving its full entitlement of 152,500 acre-feet of water from the San Felipe Division in calendar year 1989. Also, through the Department of Water Resources, the District purchased 90,000 acre-feet of water from Yuba County Water Agency to begin delivery in summer 1989. A total of 90,000 acre-feet of entitlement water is scheduled to be delivered from the State Water Project in calendar year 1989. These purchases of imported water are costing about $12 million dollars more as compared with earlier financial projections.

Expansion of the In-County Distribution System continues. The Snell Pipeline is complete. Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main are complete and delivery of water began in February 1989. Construction of Calero Pipeline started in May 1989. The Mountain View Distributary and Milpitas Pipeline are in the design phase and scheduled for construction in 1989 and 1990.

The District and the San Francisco Water Department are negotiating a possible emergency intertie between the District's Penitencia Treated Water System and the Hetch Hetchy Aqueduct.

The Anderson Dam hydroelectric generation facility is complete. Design work for Coyote Dam intake modification began in May 1989.

The District is continuing programs to protect the groundwater basin. These programs include provision of funding to Santa Clara County to implement hazardous materials management, providing oversight to investigation and cleanup of fuel leaks, sealing abandoned wells, and maintaining the groundwater basin database.

Based on revenues and expenditures projections, including the added imported water cost and the addition or extension of certain necessary facilities, an increase in the basic user rate is needed. Although the rates are set annually, the additional cost for imported water will be recovered over a three year period in Zone W-2 and a four year period in Zone W-5. Groundwater pumping is discouraged in Zone W-2 during 1989-90 by increasing the basic user rate $10 per acre-foot and reducing the treated water surcharge to generate the same amount of income.

Following meetings with the Water Retailer Agencies, the Agricultural Water Advisory Committee and the Santa Clara Valley Water Commission, the District Board of Directors adopted water rates for 1989-90 which are shown at the end of this report. Zone W-2 groundwater charges and equivalent basic user rates for 1989-90 are $135 per acre-foot for municipal and industrial water and $31.25 per acre-foot for agricultural water. Zone W-5 groundwater charges and equivalent basic user rates for 1989-90 are $39.00 per acre-foot for municipal and industrial water and $9.75 per acre-foot for agricultural water.

John T. O'Halloran
General Manager

AN AFFIRMATIVE ACTION EMPLOYER

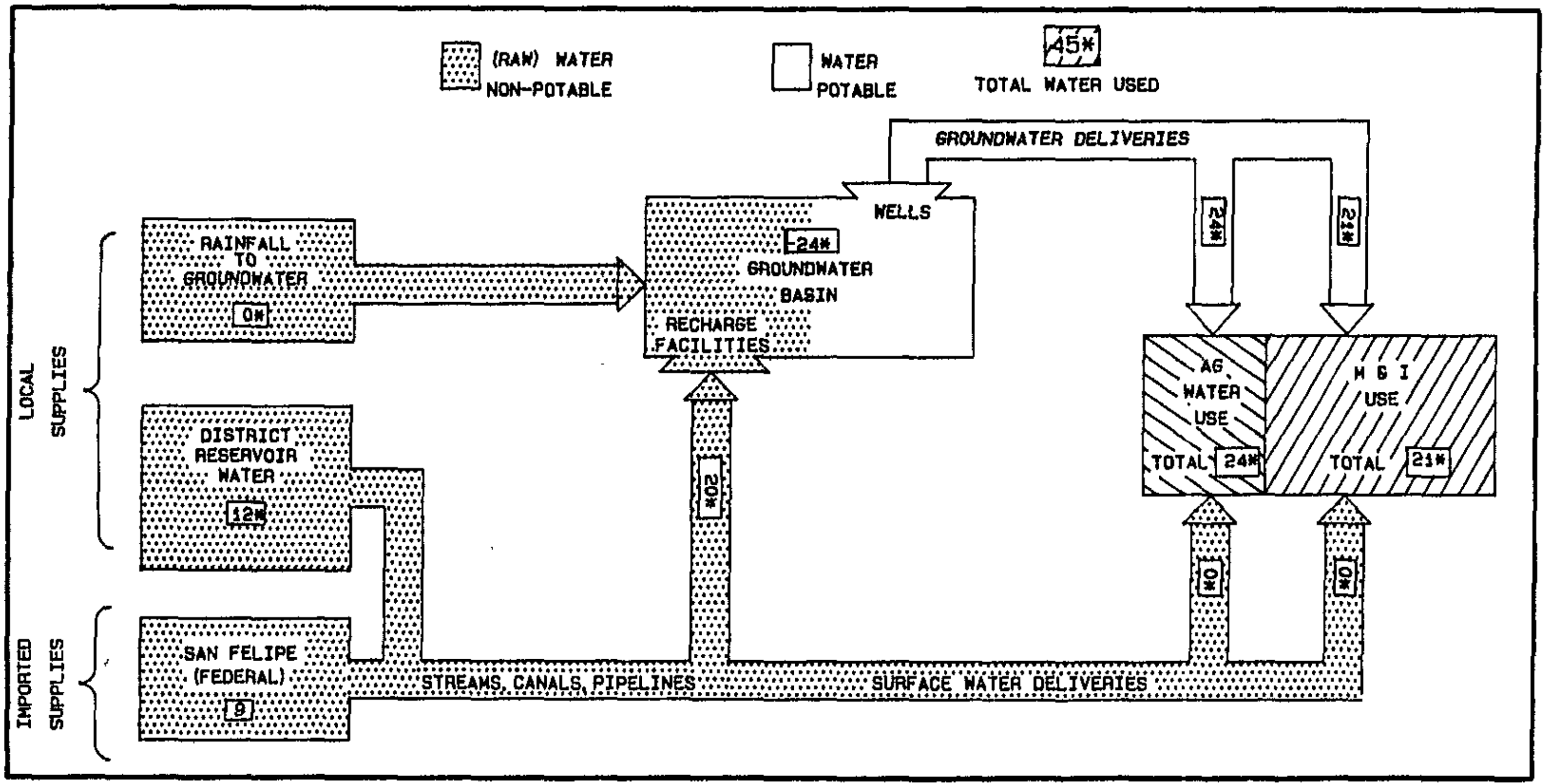
This is the eighteenth annual report on the status of the Santa Clara Valley Water District's Water Utility Enterprise. The purpose of this report is to provide information on the following items:

- Current and future water requirements of Santa Clara County
- Current and future water supplies available to meet those requirements
- Future capital improvement needs
- Future financial needs of the Water Utility Enterprise including expenditures and a means of financing them
- Water charges to be levied in any zone or zones of the District for fiscal year 1989-90

1987-88 Water Picture * * *

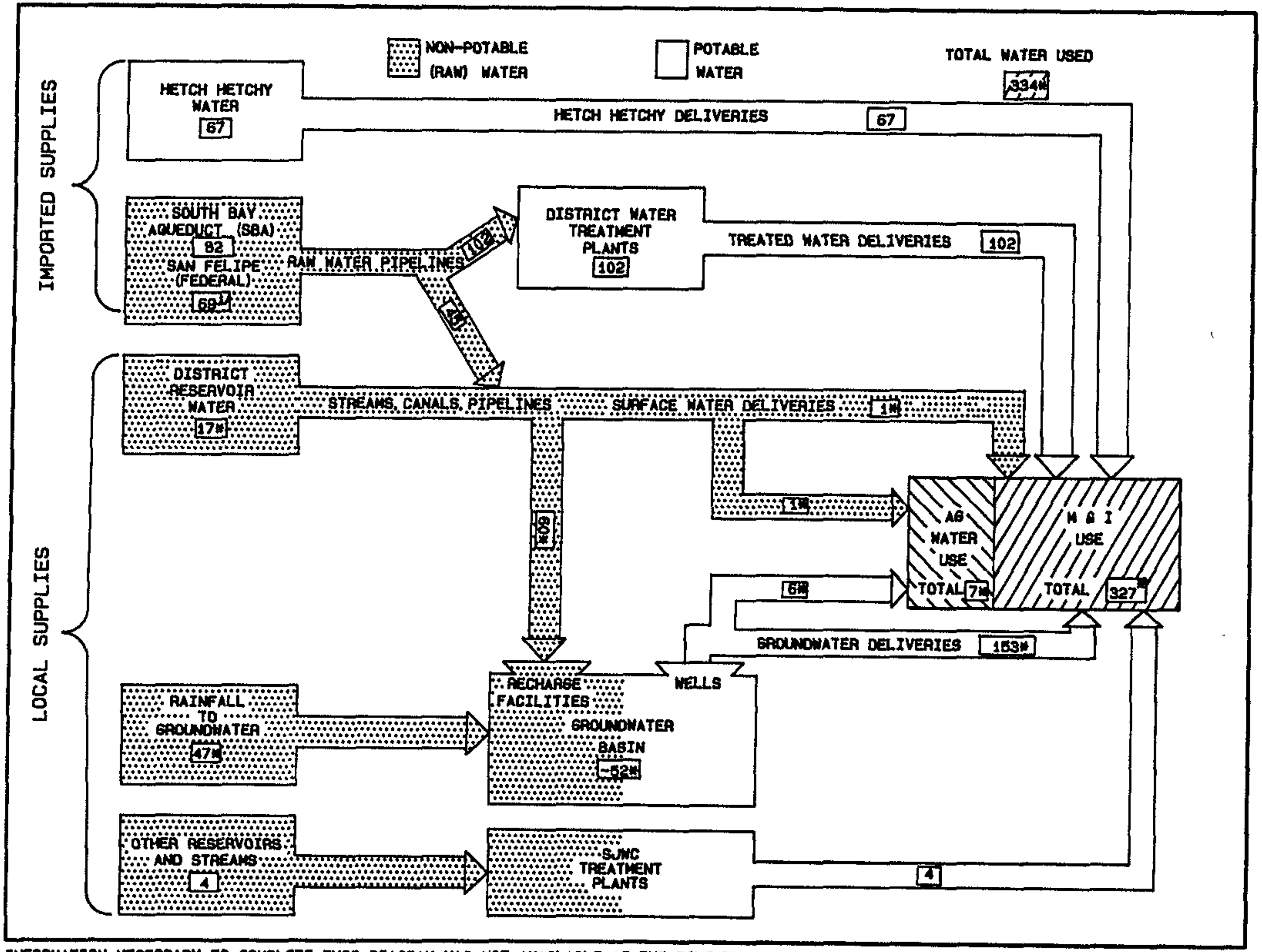
Rainfall in Santa Clara County during 1987-88 was about 60% of normal. This was the second consecutive drought year. Due to very limited local supplies, the District imported additional water from the San Felipe Division which was used to recharge the groundwater basins and supply the treatment plants. In response to dropping groundwater levels, in April 1988, the District's Board of Directors asked for a voluntary 15% reduction from 1987 water use. Actual reduction by major water retailers in calendar year 1988 was about 4%. Data is being collected on groundwater levels and water use to monitor the threat of land surface subsidence.

WATER SUPPLY & USE
SOUTH SANTA CLARA COUNTY
(ZONE W-5)
1987-88
(VALUES IN THOUSAND ACRE-FEET)



INFORMATION NECESSARY TO COMPLETE THIS DIAGRAM WAS NOT AVAILABLE AT THE TIME THIS REPORT WAS PREPARED
*PRELIMINARY - SUBJECT TO REVISION

WATER SUPPLY AND USE
NORTH SANTA CLARA COUNTY
(ZONE W-2)
1987-88
(VALUES IN THOUSAND ACRE-FEET)



INFORMATION NECESSARY TO COMPLETE THIS DIAGRAM WAS NOT AVAILABLE AT THE TIME THIS REPORT WAS PREPARED

1/ INCLUDES 4,000 AF OF WATER INTO RESERVOIR STORAGE

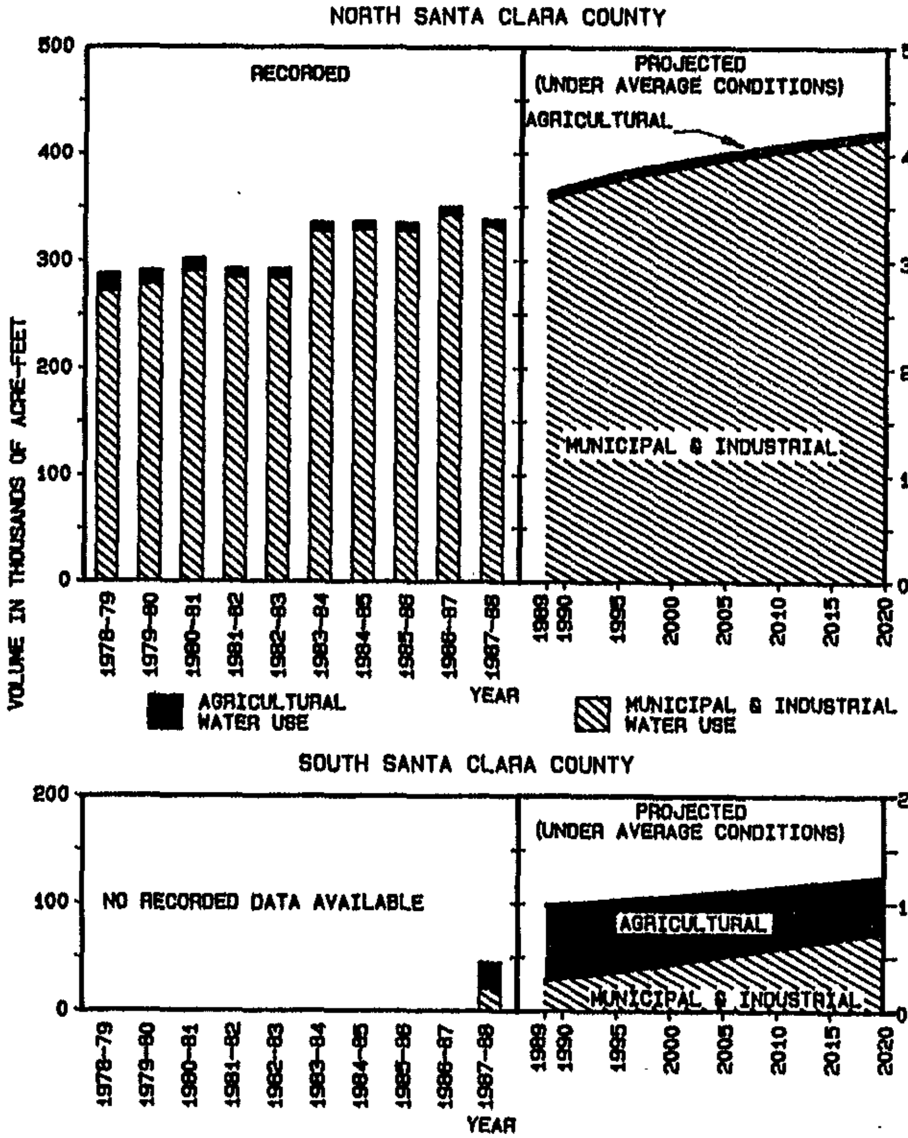
* PRELIMINARY - SUBJECT TO REVISION

Water Use * * *

Water use in Santa Clara County is categorized as either agricultural or municipal and industrial. Recorded North County water use since 1978-79 and South County Water use since 1987-88 are shown to the right.

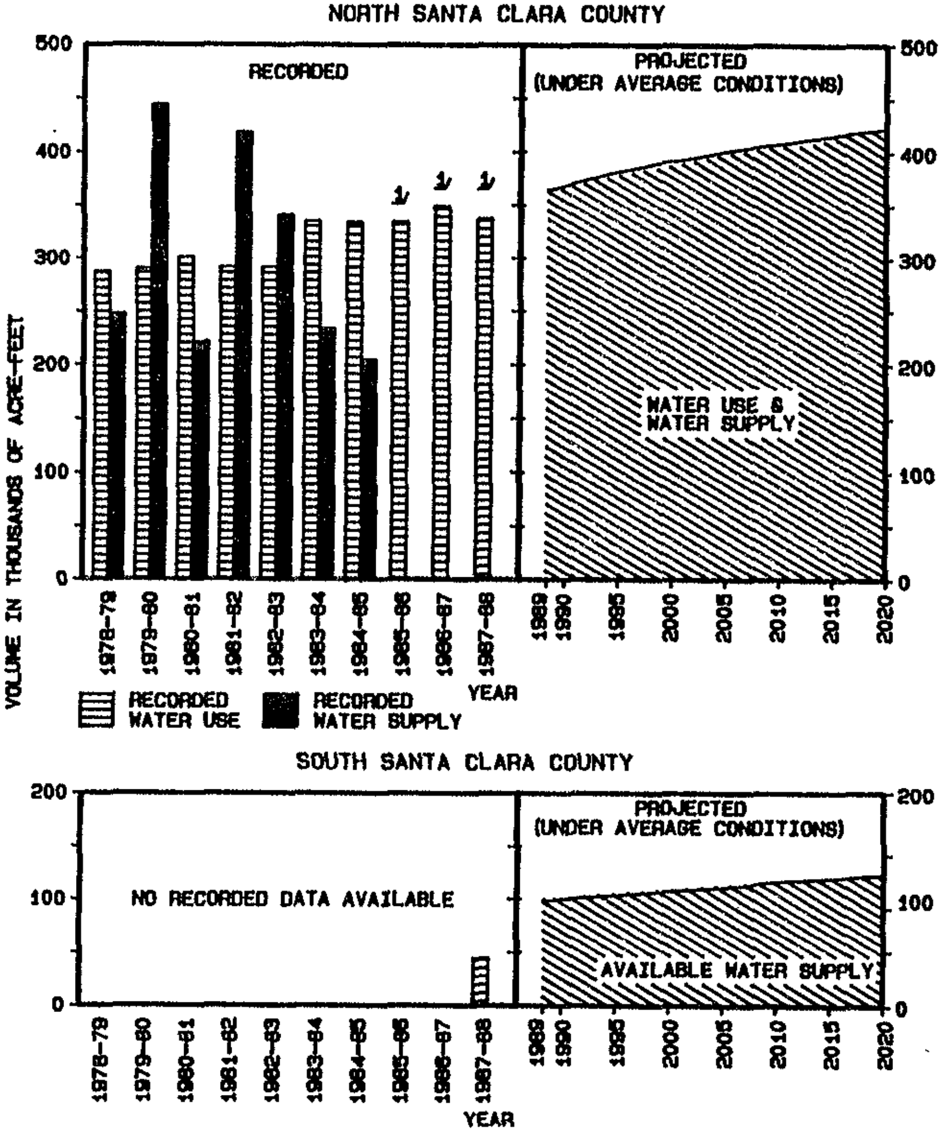
Water use in North Santa Clara County is predominantly municipal and industrial. The projections show an increase through 2020 when the total annual water use is estimated to be 420,000 acre-feet. Agricultural water use is expected to continue to decrease through 2020.

In South Santa Clara County, it is anticipated that municipal and industrial water requirements will continue to increase while agricultural requirements will decrease. Total annual water use in South Santa Clara County was projected to increase to about 125,000 acre-feet by 2020 based on land use projections. However, the actual 1987-88 municipal and industrial use was about 75% of the projected, and agricultural use was about 40% of the projected. This reduction can be partly attributed to the drought and partly to conservation which occurs when a formal groundwater production measurement program is instituted.


RECORDED AND PROJECTED WATER USE

* * * and Water Supply

RECORDED WATER USE & SUPPLY AND PROJECTED WATER REQUIREMENTS



Present sources of water supply in North Santa Clara County consist of locally conserved water and water imported via the South Bay Aqueduct, San Felipe Division, and Hetch Hetchy Aqueduct. The recorded annual water supply and water use in North Santa Clara County since 1978-79 are shown to the left. South Santa Clara County is supplied by locally conserved water and water imported via the San Felipe Division.

The 1987-88 rainfall was approximately 60% of normal, runoff was far below normal, and the District's Board of Directors asked for voluntary water conservation. Although 1988-89 rainfall is currently about 57% of normal to date, District reservoirs storing local runoff are only at 11% of capacity.

1/ Some data necessary to determine 1985-88 values are not yet available.

In-County Water Distribution System * * *

In 1975, the District published its Master Plan describing projects required to meet projected water needs in Santa Clara County through the year 2020. That construction program has been updated to meet changing conditions. The major facilities recently completed are the Santa Teresa Water Treatment Plant, Santa Teresa Force Main, Santa Teresa Tunnel, Greystone Pipeline, Greystone Pump Station, and Snell Pipeline. The facilities proposed to be constructed between now and fiscal year 1990-91 are Calero Pipeline, Milpitas Pipeline, and Mountain View Distributary. Rinconada and Penitencia Sludge Handling Systems are currently under construction and will be completed in 1989. Rinconada and Penitencia Water Treatment Plant Disinfection Modifications, West Pipeline Extension, Parallel West Pipeline, Parallel East Pipeline, and East Reservoir and Delivery Main are scheduled for construction during the 1991-94 period.

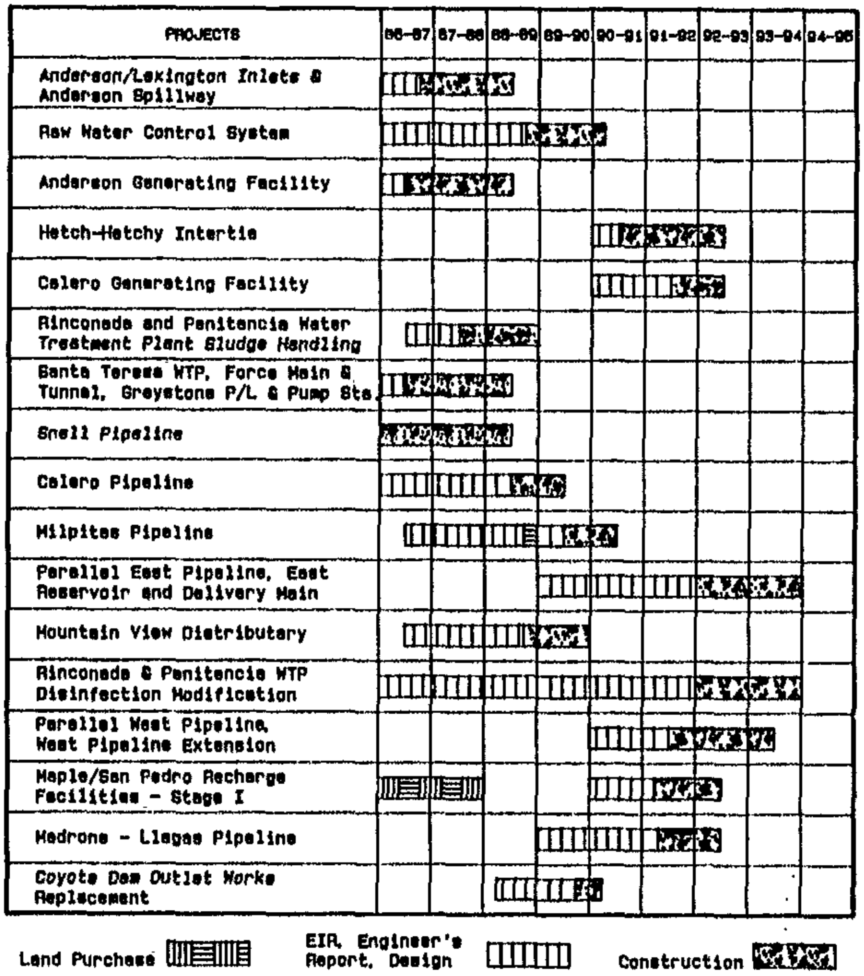
The 1983 master plan report for South Santa Clara County recommended a groundwater recharge and extraction system for meeting projected supplemental South County water needs. Maple Avenue Recharge Facility and the Madrone-Llagas Pipeline are currently scheduled for construction in 1991-93.

Anderson Dam hydroelectric power generation facility is complete. A Calero generating facility is scheduled for construction in 1992.

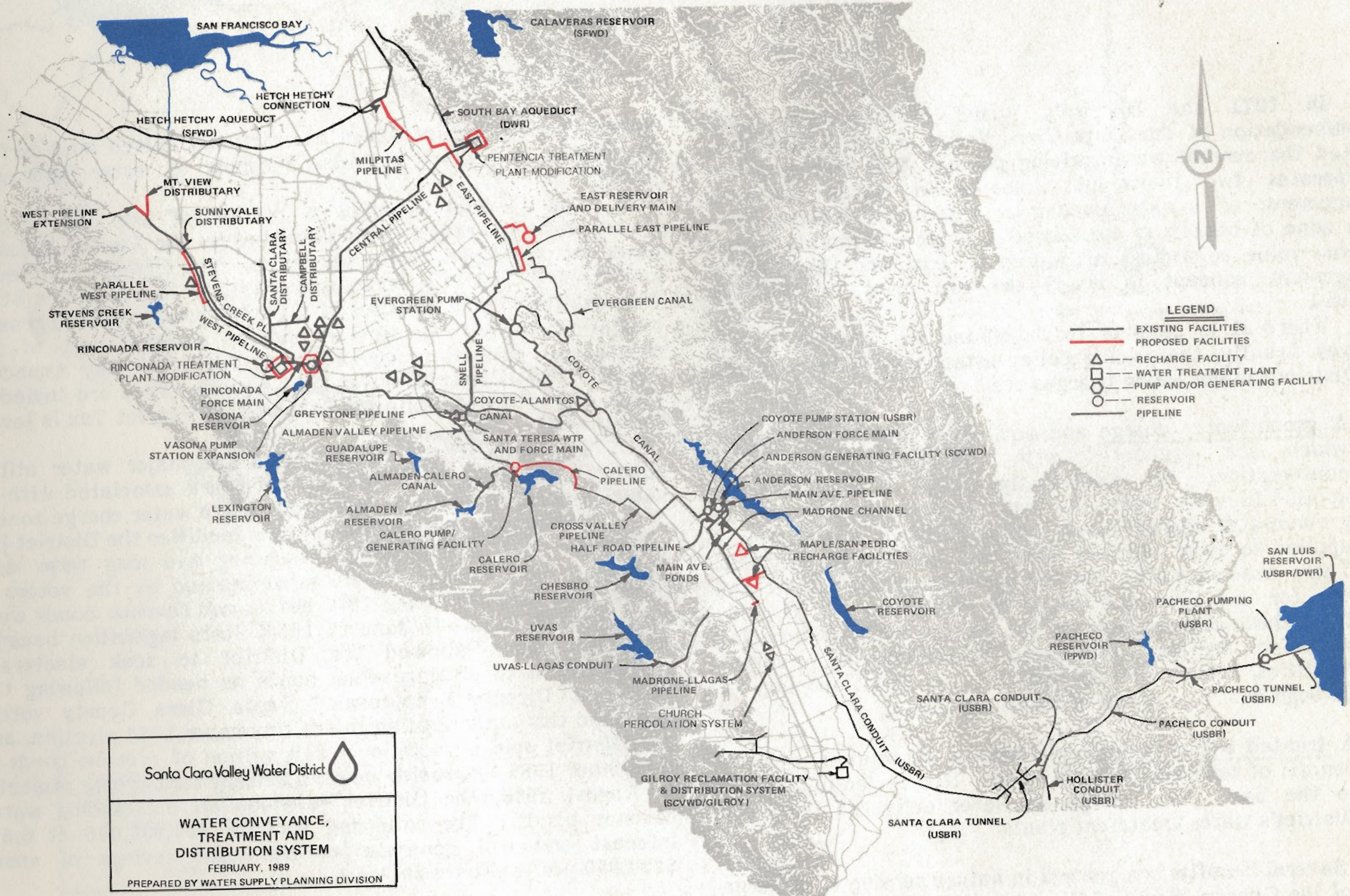
New inlet structures at both Anderson and Lexington Reservoirs are essentially complete.

The map on the following page shows the location of the District's major existing and proposed facilities.

PROJECTED NEW FACILITY CONSTRUCTION PROGRAM
FOR THE WATER UTILITY ENTERPRISE
1986-87 THROUGH 1994-95



* * * Improvement and Expansion



Santa Clara Valley Water District

WATER CONVEYANCE, TREATMENT AND DISTRIBUTION SYSTEM

FEBRUARY, 1989

PREPARED BY WATER SUPPLY PLANNING DIVISION

Sources of Revenue * * *

In 1971 the District's Board of Directors, upon recommendation of the Santa Clara Valley Water Commission, adopted the current water pricing policy. This pricing policy incorporates two important concepts in water resources management: (1) a water pooling concept in which water for a given zone of benefit is considered a single commodity with a uniform value regardless of source or cost and (2) a water management concept in which the user pays for benefits received.

Where it is possible to determine the benefits a user receives directly, the pricing policy establishes water charges. The District's major water charges are:

- A groundwater charge and equivalent basic user charge, which are associated with the benefit of water consumption. The groundwater charge is an excise tax applied to water extracted from the groundwater basin in groundwater charge zones, while the basic user charge is applied to other types of water delivered by the District. There are two rates, one for agricultural (Ag) water and one for municipal and industrial (M&I) water. Revenue from these charges pays for the general costs of providing water and for the capital costs of constructing in-county facilities, either through "pay as you go" financing, or through debt repayment of bonds and loans.

- A treated water surcharge, which is associated with the benefit of receiving treated water. It is levied in addition to the basic user charge on water delivered from the District's water treatment plants.

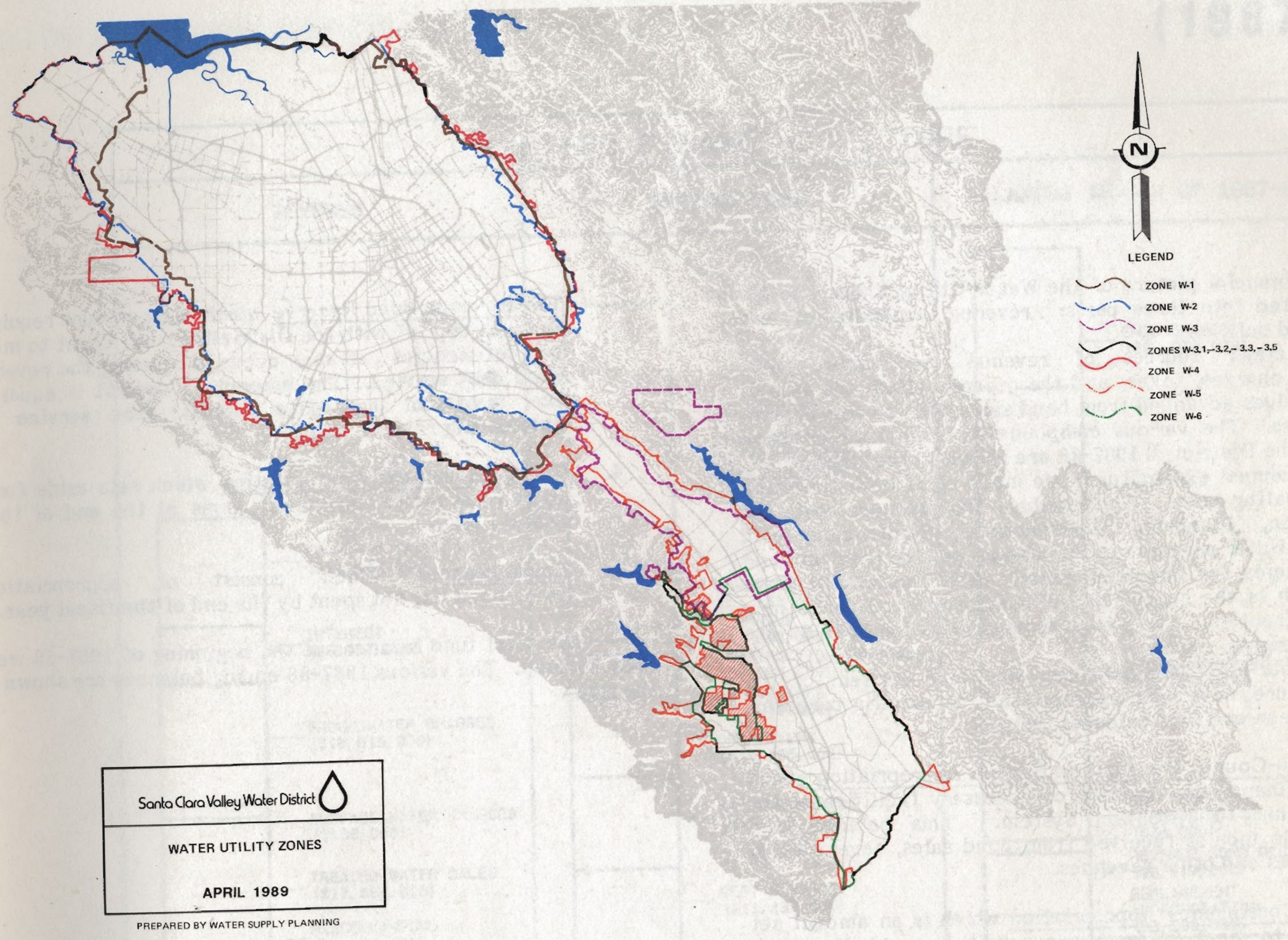
Several benefits are general in nature serving all or large areas of the County. Some of these benefits are the availability of imported water to the County, recreation associated with the District's reservoirs, and the replenishment of the County's groundwater subbasins which has virtually halted land surface subsidence and which provides a supply of water in drought periods.

The District receives a portion of the one percent Countywide tax revenues as allocated by the County Assessor based on pre-1978 District tax levies. The District also levies additional ad valorem taxes under Article XIII A of the State Constitution for the purposes of a) paying prior approved general obligation bond debt service and b) meeting part of the contractual obligations to the State for South Bay Aqueduct water. The District's major debt service taxes are levied in Zones W-1 and W-6 while the State Water Project Tax is levied Countywide.

The map at the right locates the major water utility zones. Zones W-1, W-3, W-4, and W-6 are associated with ad valorem taxes while Zones W-2 and W-5 are water charge zones.

To fund the construction of new facilities the District has relied on both pay-as-you-go financing and long term debt financing from revenue bonds as authorized by the voters in 1977. The last remaining 1977 authorized revenue bonds were sold in April 1984. In January 1984, State legislation became effective which allowed the District to seek electorate authorization to issue revenue bonds as needed following the Board of Directors' approval. Santa Clara County voters approved this authorization in the November 1984 election, and the District sold an additional $30 million of revenue bonds in November 1985 to provide needed funding for ongoing projects. In August 1986, the District refunded all outstanding water revenue bonds. The refunding was for $94,935,000 at 6.8% interest and will generate an estimated savings of about $200,000 per year over 20 years.

* * * Related to Costs of Providing Benefits


N
LEGEND
ZONE W-1
ZONE W-2
ZONE W-3
ZONES W-3.1,-3.2,-3.3,-3.5
ZONE W-4
ZONE W-5
ZONE W-6
Santa Clara Valley Water District
WATER UTILITY ZONES
APRIL 1989
PREPARED BY WATER SUPPLY PLANNING

The Financial Picture * * *

The financial picture of the Water Utility Enterprise has been separated into three parts: revenue, expenditures, and year-end fund balances.

The major sources of revenue are water sales, groundwater charges, taxes, and the proceeds from the sale of bonds. Revenues advanced from bond sales must be repaid from water charges. The various components of the total revenue received by the District in 1987-88 are shown to the right.

Total annual expenditures are made up of both operating and non-operating costs. They include the program costs for Administration, Planning, Construction, Maintenance and Operations. Water purchase is the amount paid to the State and Federal agencies for imported water. Also included is Debt Service which is the repayment of bonds sold to finance new facility construction. The actual expenditures for 1987-88 are shown to the right.

The year-end fund balances, the third element of the financial picture, have been appropriated for specific purposes. The various year-end fund balances include:

1. The In-County Distribution System Appropriation which will finance construction of necessary facilities of the In-County Distribution System. This balance may include monies received from bond sales, taxes, water charges and other revenues.

2. The Contingency Appropriation which is an amount set aside to meet unforeseen expenditure needs that may arise.

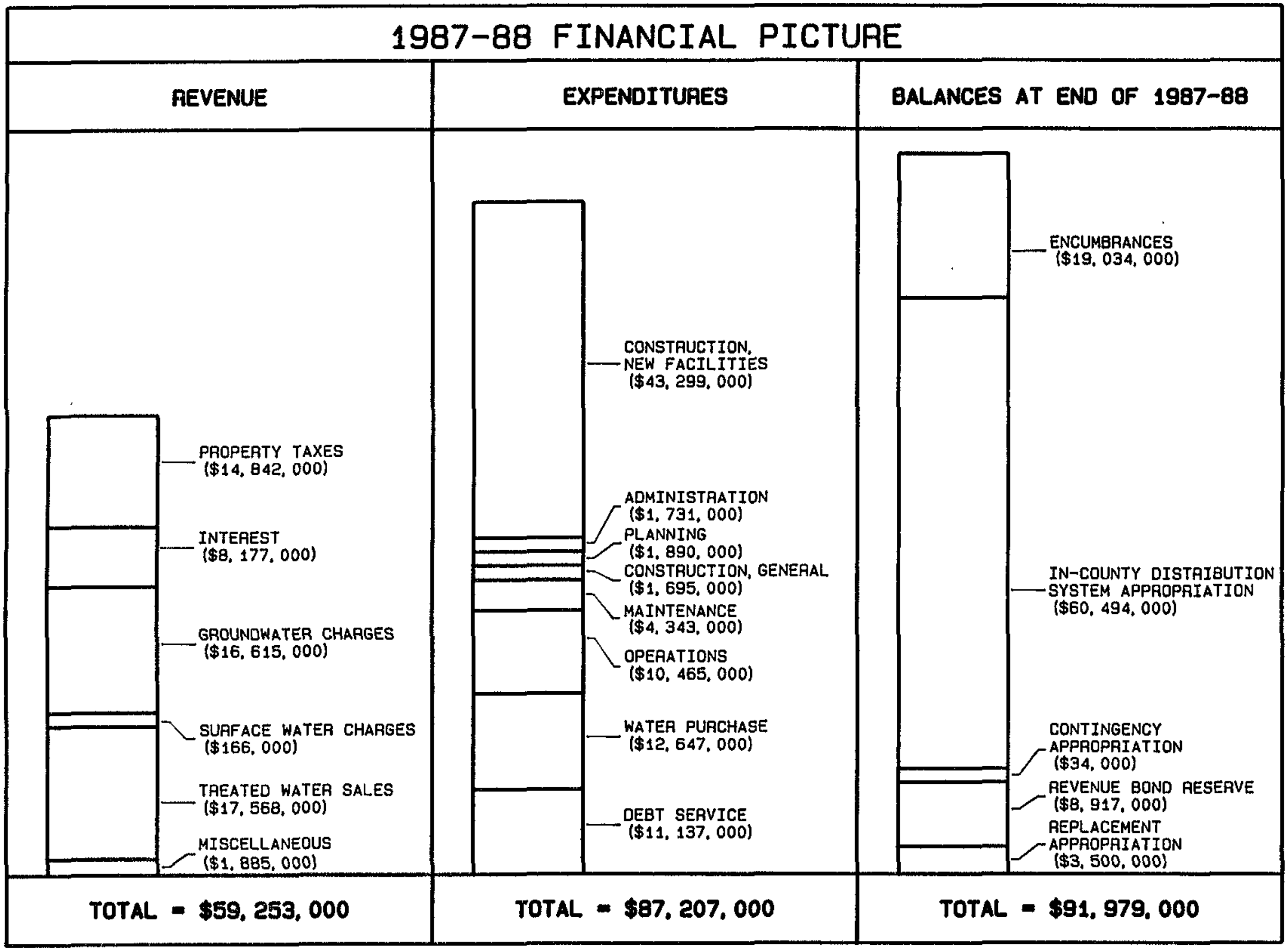
3. The Revenue Bond Reserve which is an amount required to be on deposit with the District's Fiscal Agent to meet any deficiencies that may occur in meeting the revenue bond debt service. The amount on deposit is equal to the maximum aggregate annual debt service on outstanding revenue bonds.

4. The Replacement Appropriation which sets aside funds to replace major equipment items at the end of their useful life.

5. Encumbrances which consist of appropriations committed but not spent by the end of the fiscal year.

The total fund balances at the beginning of 1987-88 were $119,933,000. The various 1987-88 ending balances are shown to the right.

* * * of the Water Utility Enterprise (1987-88)



Financial Estimates * * *

Revenues, expenditures and year-end balances for the 1988-89 fiscal year as estimated in April 1989 are shown in the chart on the opposite page.

Revenue from groundwater charges and raw surface water sales are collected semiannually in the month following the six-month period in which the water was used. Therefore, the 1988-89 revenue projections include six months of 1987-88 and six months of 1988-89 water deliveries. In Zone W-2, the M&I rate of $100.00 per acre-foot and the Ag rate of $25.00 were constant for both 1987-88 and 1988-89. In Zone W-5 the M&I rates were $22.00 and $26.00, and Ag rates were $5.50 and $6.50 for 1987-88 and 1988-89, respectively.

The contract treated water sales revenue for 1988-89 is based on the basic user rate of $100 and the treated water surcharge rate of $95 for a combined rate of $195 per acre-foot.

Estimated revenue from property taxes includes income from the one percent allocation ($6,247,000), from debt service taxes ($1,712,000), and from the State Water Project Tax ($7,205,000).

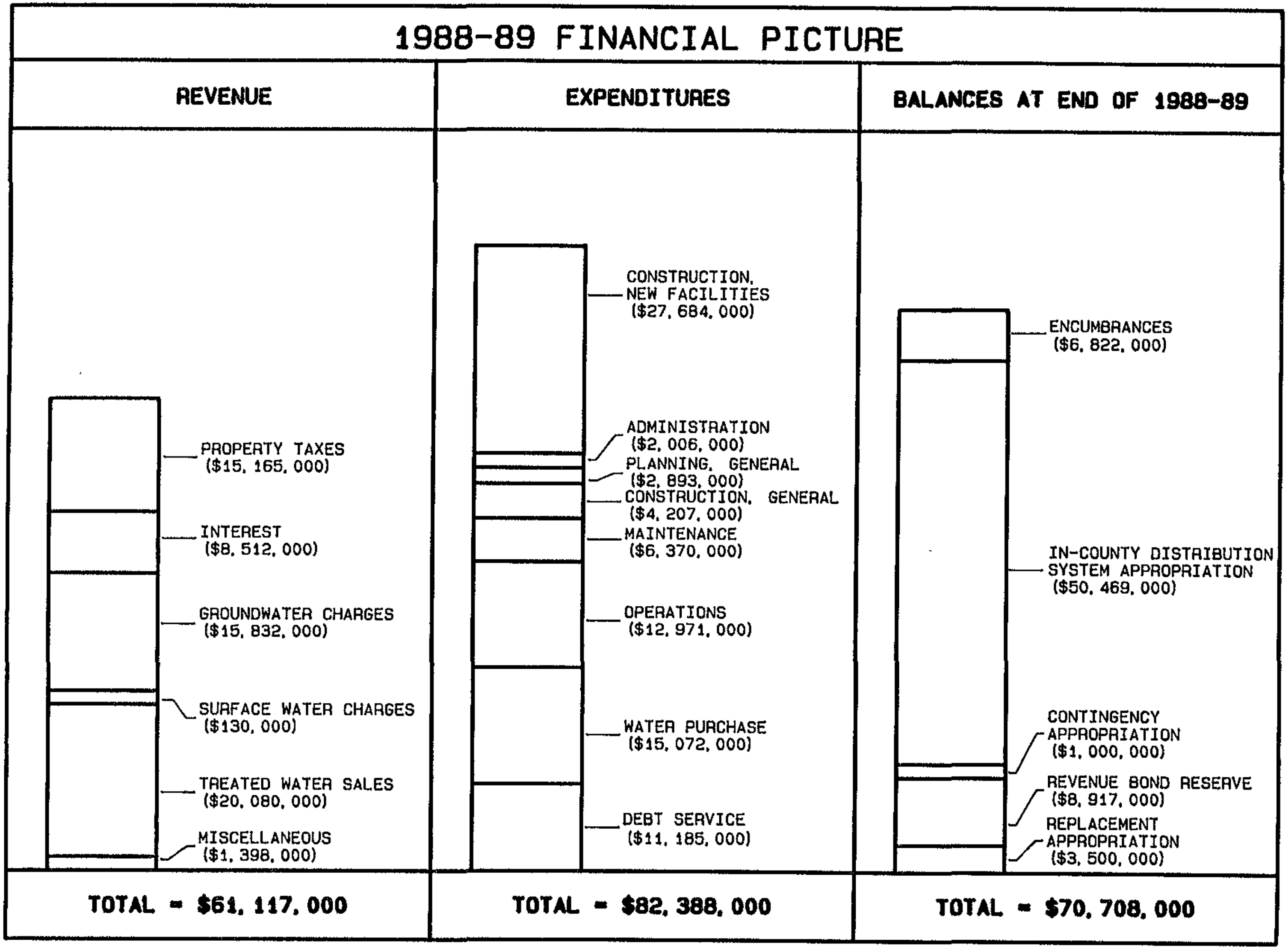
The estimated 1988-89 expenditures are as shown in the chart on the opposite page. The construction expenditures are not the total contract amounts. Only *the estimated dollars spent (cash outflow) during the year* are shown in the chart and discussed on this page as expenditures. The remaining contract amounts encumbered for future years' expenditures are included in the year end balances.

The major expenditures for the year are the final stage of construction of Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main construction ($6,644,000) and Snell Pipeline construction ($360,000). Other major expenditures are Coyote Dam outlet works replacement planning and design ($200,000), as well as Anderson and Lexington Reservoir Inlets construction ($2,658,000), Rinconada and Penitencia Sludge Handling construction ($4,889,000), Calero Pipeline design and construction ($4,504,000), Anderson Generating Facility construction ($1,106,000), Milpitas Pipeline planning, land purchase, and design ($2,400,000), Mountain View Distributary design and construction ($1,155,000), Rinconada and Penitencia Disinfection Modification planning and design of pilot plant ($433,000), Control Systems design and construction ($1,336,000).

The cost of imported water from the State Water Project is estimated at about $8,309,000 for 89,000 acre-feet entitlement in 1988-89. Imported water from the San Felipe project is projected to cost $6,763,000 for 116,250 acre-feet of water in 1988-89.

* * * for the Current Year

(1988-89)



Financial Projections * * *

Revenue as projected in April 1989 for fiscal year 1989-90 is shown on the opposite page. The projected revenue is based on groundwater charges and basic user rates for groundwater extractions and raw surface water deliveries made in the latter half of 1988-89 and the first half of 1989-90 and for treated water throughout the year.

In Zone W-2, the 1989-90 revenue is based on the groundwater extractions and raw surface water M&I rate of $100 per acre-foot and the Ag rate of $25 per acre-foot for the last half of 1988-89 and $135 and $31.25 per acre-foot for M&I and Ag water, respectively, for the first half of 1989-90. The corresponding rates in Zone W-5 are the M&I rate of $26 and the Ag rate of $6.50 per acre-foot for the last half of 1988-89 and $39 and $9.75 per acre-foot for M&I and Ag water, respectively, for the first part of 1989-90.

The contract treated water revenue is based on the basic user rate of $135 per acre-foot plus the treated water surcharge of $75 per acre-foot for a total treated water charge of $210 per acre-foot.

The projected revenue from taxes includes the one percent allocation ($6,780,000), the debt service taxes ($2,250,000), and the State Water Project tax ($7,442,000).

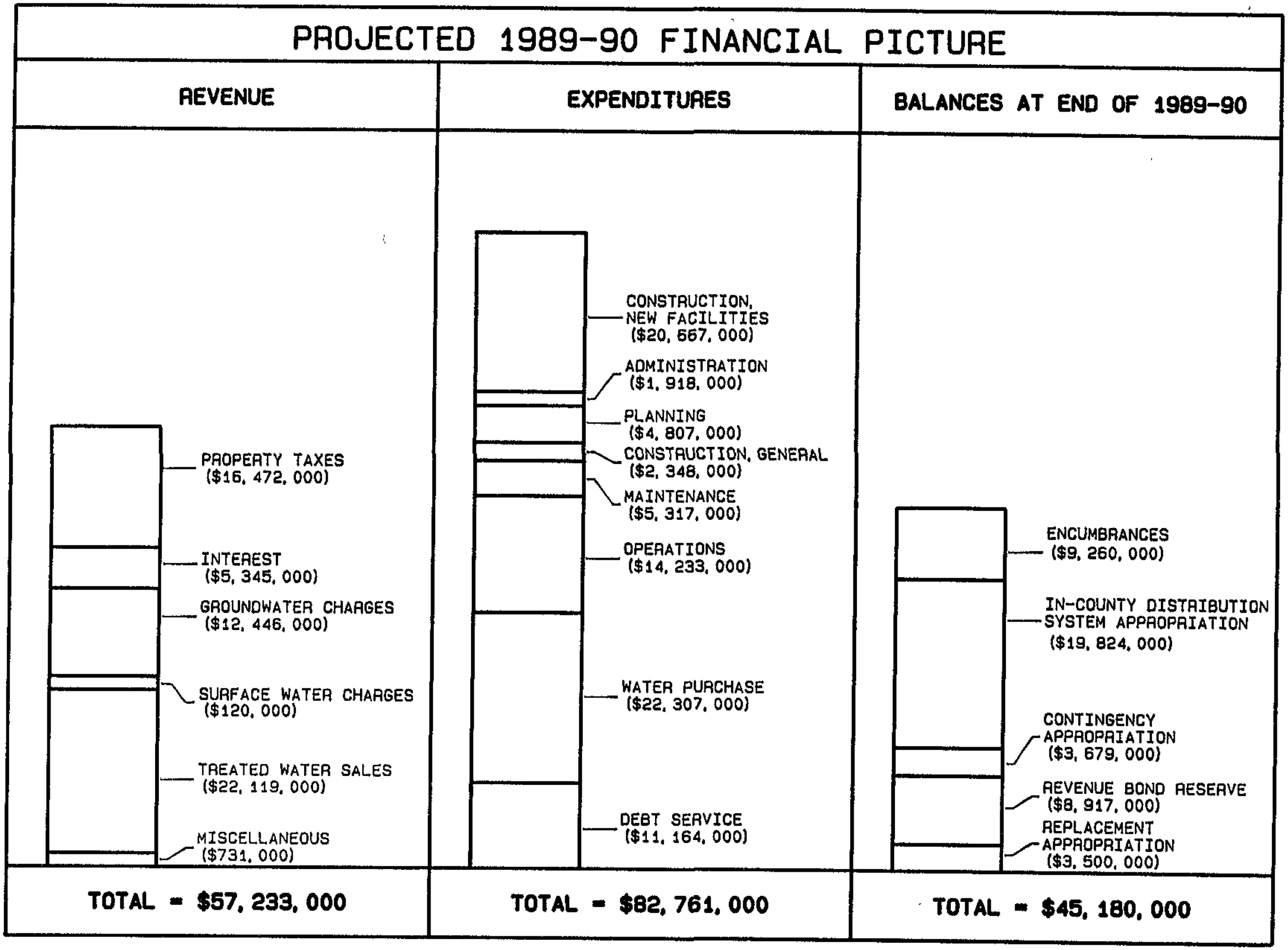
Projected expenditures for 1989-90 include costs to operate and maintain existing facilities, to purchase State Water Project, San Felipe Division, and Yuba County water, and to design and build new facilities.

The projected 1989-90 expenditures shown on the opposite page and discussed on this page are estimated actual expenditures, not contract amounts. Estimated dollars remaining to fulfill outstanding contract obligations are shown as encumbrances at the end of 1989-90.

Major costs are Coyote Dam outlet works replacement design and construction ($2,378,000), Calero Pipeline construction ($3,096,000), Control System construction ($2,675,000), Rinconada and Penitencia Water Treatment Plant Disinfection Modification planning and design of pilot plant ($909,000), Milpitas Pipeline land purchase, design, and construction ($10,267,000), Mountain View Distributary construction ($1,459,000), East Reservoir and Delivery Main planning ($193,000), and Parallel East Pipeline planning ($85,000).

The cost of imported water from the State Water Project is estimated at about $8,585,000 for 91,000 acre-feet entitlement in 1989-90. Imported water from the San Felipe Project is projected to cost $6,848,000 for 111,000 acre-feet of water in 1989-90. Imported water from Yuba County is estimated about $7,200,000 for 90,000 acre-feet for 1989-90.

* * * for the Next Fiscal Year (1989-90)



Water Charges * * *

Groundwater charges and equivalent basic user rates to be levied in 1989-90 in Zone W-2 and Zone W-5 are summarized in Table I and Table II, respectively. The countywide ad valorem State Water Project Tax will be levied to generate $7,442,000.

TABLE I

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-2
FOR
FISCAL YEAR 1989-90

Agricultural Water (Ag)	$31.25/Acre-Foot
Nonagricultural Water (M&I)	$135.00/Acre-Foot

TABLE II

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-5
FOR
FISCAL YEAR 1989-90

Agricultural Water (Ag)	$9.75/Acre-Foot
Nonagricultural Water (M&I)	$39.00/Acre-Foot

* * * for 1989-1990

WATER RATE COMPONENTS
AND WATER CHARGES
FOR FISCAL YEAR 1989-90

Components

COMPONENT	RATE
Basic User, Zone W-2	
Agricultural	$31.25/AF
Municipal and Industrial	135.00/AF
Basic User, Zone W-5	
Agricultural	9.75/AF
Municipal and Industrial	39.00/AF
Treated Water Surcharge	
Contract	75.00/AF
Noncontract	48.00/AF
Water Master	10.50/AF
Capital Cost	
Half Road Lateral System	2.75/AF
Power	
Half Road Lateral System	6.50/AF
Evergreen System	37.00/AF

Charges

TYPE OF CHARGE	Ag WATER	M & I WATER
Groundwater		
Zone W-2	$31.25/AF	$135.00/AF
Zone W-5	9.75/AF	39.00/AF
Surface Water [1/]		
Evergreen Deliveries	72.00/AF	N/A
Half Road Deliveries	29.50/AF	58.75/AF
Other Zone W-5 Deliveries	20.25/AF	49.50/AF
Other Zone W-2 Deliveries	41.75/AF	145.5/AF
Minimum Charge - Zone W-5	39.75/YR	39.75/YR
Minimum Charge - Zone W-2	111.75/YR	111.75/YR
Stored Water		
Zone W-2	31.25/AF	135.00/AF
Zone W-5	9.75/AF	39.00/AF
Treated Water [2/]		
Contract	-	210.00/AF
Noncontract	-	183.00/AF
Reclaimed Water		
Gilroy	20.00/AF	80.00/AF

[1/] Surface water charge is the sum of the Basic User plus the Water Master. Also, it includes the Capital Cost and Power wherever applicable. The charge for the Ag Evergreen deliveries remains the same as 1988-89. The District is no longer delivering M&I water to the Evergreen area.

Half Road = Basic User (Ag/M&I @ $9.75/$39) + Water Master ($10.5) + Capital ($2.75) + Power ($6.50)

Other Zone W-5 Deliveries = Basic User (Ag/M&I @ $9.75/$39) + Water Master ($10.5)

Other Zone W-2 Deliveries = Basic User (Ag/M&I @ $31.25/$135) + Water Master ($10.5)

Minimum Charge W-5 = 0.75 X Basic User W-5 (M&I @ $39) + Water Master ($10.5)

Minimum Charge W-2 = 0.75 X Basic User W-2 (M&I @ $135) + Water Master ($10.5)

2/ Treated Water Charge is the sum of Basic User ($135) and Treated Water Surcharge ($75)